ABSTRACT OF THE DISCLOSURE

A frequency synchronizer system is based on the maximum likelihood criterion from estimation theory and that can achieve both frequency acquisition and frequency tracking without requiring knowledge at the receiver of the carrier's phase angle, baud timing, or a preamble consisting of known signal symbols. The synchronizer includes a processor for executing the following sequence of operations: a) initializing an estimated frequency correction factor; b) determining a corrected frequency offset value from a first product of a sample signal and the estimated frequency correction factor; c) filtering a first sample of the corrected frequency offset value to obtain a filtered corrected frequency offset value; d) imparting a delay to a second sample of the corrected frequency offset value to obtain a delayed corrected frequency offset value; e) determining a conjugate product value from a second product of the filtered corrected frequency offset value and a conjugate of the filtered corrected frequency offset value; f) determining a delay conjugate value from a third product of the delayed corrected frequency offset value and the conjugate product value; g) determining an error signal from the delay conjugate value; h) determining a frequency offset value from the error signal; and i) determining an updated value of the estimated frequency correction factor from the frequency offset value.